Sir,

Bilateral retinal pigment epithelial detachment as the presenting symptom of acute myeloid leukaemia

Ocular involvement in leukaemia can manifest either through direct leukaemic infiltration or through secondary changes resulting from haematological abnormalities. Although retinopathy is by far the most common manifestation, virtually all other ocular structures may be involved.[1]

Case report

An 18-year old man presented at the clinic with a complaint of bilateral blurring of vision and metamorphopsia in the left eye for 5 days. Past ocular history was uneventful. The young man was originally from Iran but had been living in Germany for 9 years. Past medical history was unremarkable except for unconfirmed suspicion of meningitis two years ago. On further questioning he affirmed having felt feverish, experienced night sweats and been unable to perform sports for the last two weeks. Weight loss was negated. The young man presented a lean stature and pronounced pallor of skin. Visual acuity was 20/32 in the right eye and 20/63 in the left eye. Slit lamp examination was unremarkable and intraocular pressure was 15 mm Hg. Fundus examination revealed bilateral serous detachment of the macular area (Figure 1). The optic nerve head and peripheral retina presented no pathological findings. Palpation disclosed enlarged cervical lymph nodes. On fluorescein angiography, no pathological staining was observed. (Figure 2) OCT revealed prominent and partly confluent cystoid detachment of the retinal pigment epithelium in both eyes (Figure 3). Blood count revealed low haemoglobin of 8.3 g/dl, haematocrit of 23.9%, highly elevated leucocyte count of 63.0×10^9 cells/l and reduced count of 98×10^9 thrombocytes/l. Blood urea was elevated (7.8 mg/dl). There was a minor increase in CRP (8 mg/l). Differential blood count showed 9% myeloblasts, 14% neutrophils, 1% eosinophils, 64% monocytes and 12% lymphocytes. Serology for HSV, VZV, CMV, EBV and HIV was negative. One day after presentation, the patient was transferred to the Department of Haematology and Oncology where a bone marrow examination was performed. Acute myeloid leukaemia of the FAB type M4Eo was diagnosed. Chromosome analysis and PCR confirmed inversion 16. Leukaemic meningeosis was excluded by lumbar puncture and examination of CSF. Induction chemotherapy with cytosine-arabinoside and etoposide according to the German AMLSH study protocol was initiated immediately.[2] 20 days later, the patient was seen for ophthalmological follow-up. Visual acuity had improved to 20/25 in the right eye and 20/30 in the left eye. On fundus examination and OCT (Figure 4) pigment epithelial detachment had completely resolved.

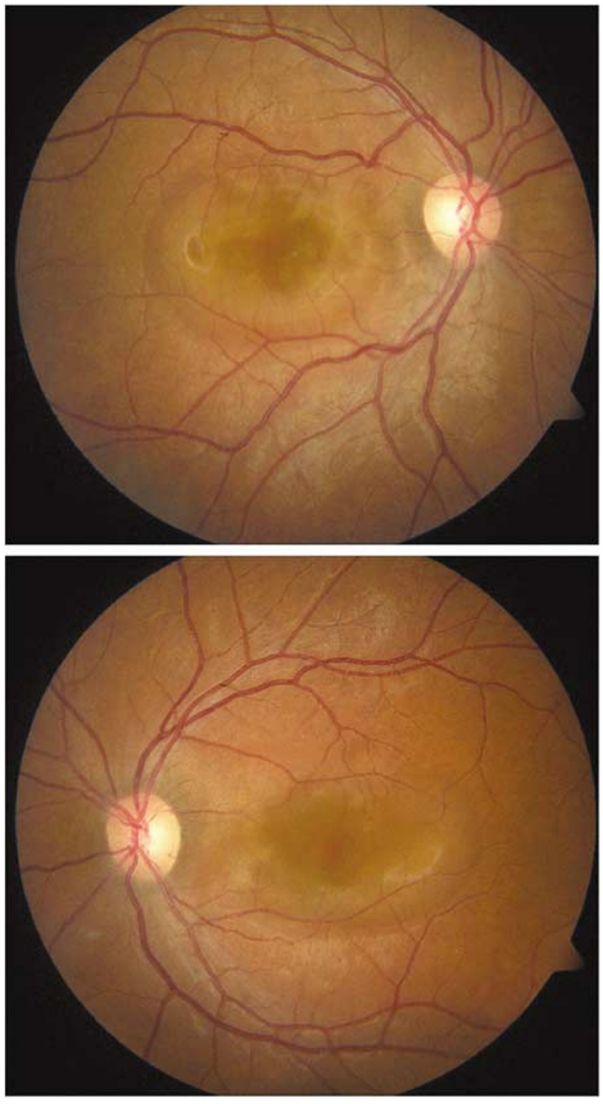

Figure 1 Fundus photographs at the time of presentation. Serous detachment of both posterior poles is evident.

Comment

Ocular infiltrates of leukaemic cells were found in 31% of post-mortem eyes from cases with fatal leukaemia.[3] Leukaemic infiltrates of the choroid are frequent and may lead to secondary changes such as pigment epithelial detachment. We describe the case of a young man presenting with acute bilateral serous pigment epithelial detachment leading to the diagnosis and therapy of acute leukaemia. Prompt institution of

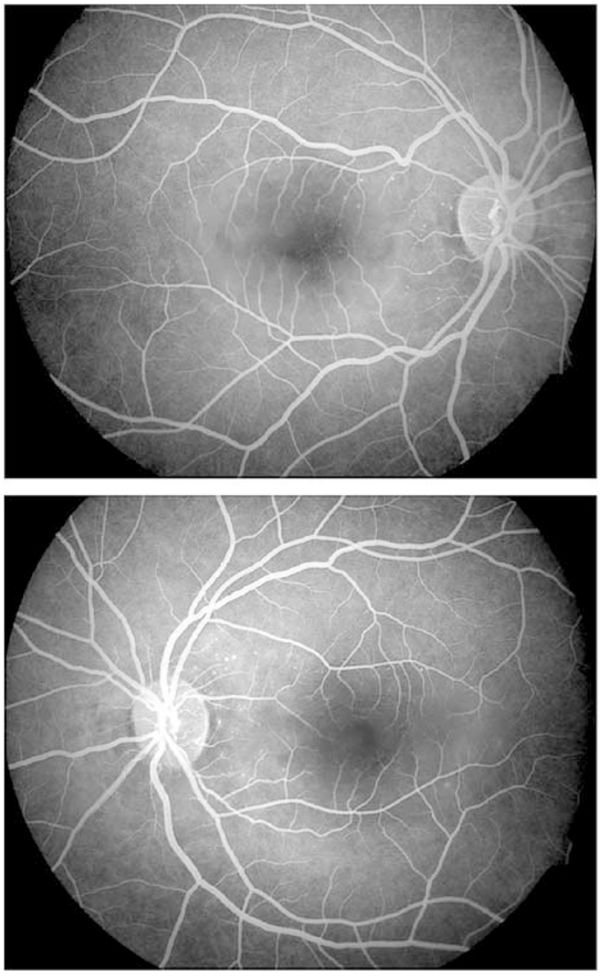

Figure 2 Fluorescein angiography performed at presentation. Macular detachment is evidenced by circumscribed filling.

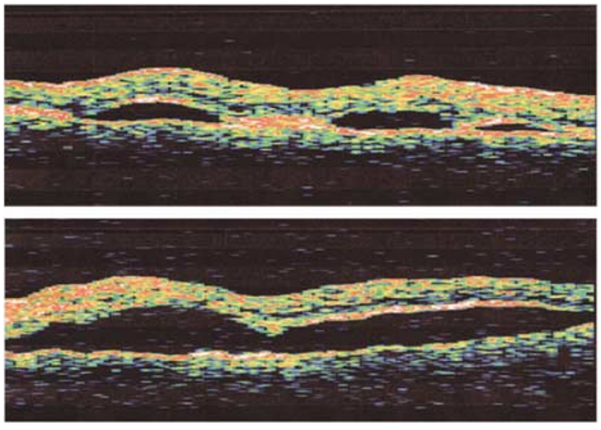

Figure 3 OCT showing cystoid detachment of the retinal pigment epithelium in the posterior pole of the right and the left eye at the time of presentation.

systemic chemotherapy proved to be a highly effective treatment for retinal pigment epithelium detachment in a setting of acute myeloid leukaemia. OCT was a valuable tool for monitoring evolution of pigment epithelial detachment (Figures 3 and 4).

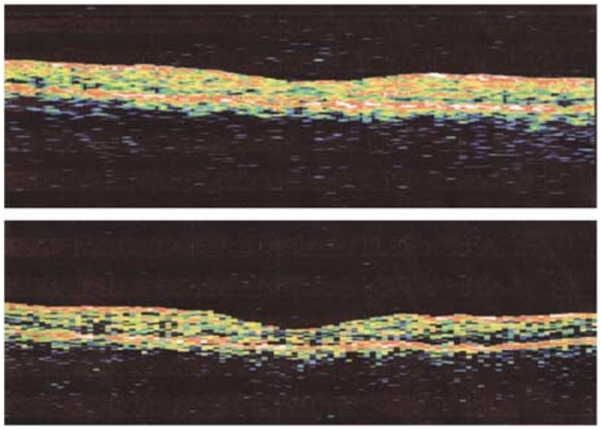

Figure 4 OCT demonstrating complete re-attachment of the retinal pigment epithelium in the left eye 20 days after initiation of systemic chemotherapy.

References

1 Sharma T, Grewal J, Gupta S, Murray PI. Ophthalmic manifestations of acute leukaemias: the ophthalmologist's role. *Eye* 2004; **18**: 63–72.
2 Heil G, Krauter J, Raghavachar A, Bergmann L, Hoelzer D, Fiedler W *et al*. Risk-adapted induction and consolidation therapy in adults with de novo AML aged $< / = 60$ years: results of a prospective multicenter trial. *Ann Hematol* 2004; **83**: 336–344.
3 Leonardy NJ, Rupani M, Dent G, Klintworth GK. Analysis of 135 autopsy eyes for ocular involvement in leukemia. *Am J Ophthalmol* 1990; **109**: 436–444.

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